



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/049,985      | 02/20/2002  | Valerio Aisa         | 108041-0009         | 2687             |

|   |  |            |
|---|--|------------|
| 7590<br>Patricia A. Sheehan<br>Cesari and McKenna, LLP<br>88 Black Falcon Avenue<br>Boston, MA 02210-2414 |  | 12/18/2007 |
|---|--|------------|

|                                  |  |
|----------------------------------|--|
| EXAMINER<br>LIEU, JULIE BICHNGOC |  |
|----------------------------------|--|

|                  |              |
|------------------|--------------|
| ART UNIT<br>2612 | PAPER NUMBER |
|------------------|--------------|

|                         |                        |
|-------------------------|------------------------|
| MAIL DATE<br>12/18/2007 | DELIVERY MODE<br>PAPER |
|-------------------------|------------------------|

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 10/049,985             |  | AISA, VALERIO       |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | Julie Lieu             |  | 2612                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 47-96 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-87 is/are rejected.
- 7) ☒ Claim(s) 88-96 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This Office action is in response to Applicant's response filed September 09, 2007.

Claim 47 has been amended.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Objections***

4. Claim 48 is again objected to because of the following informalities: "an external device" perhaps should read "said external device". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

5. Claims 47-61, 68-83, and 85-88 are again rejected under 35 U.S.C. 102(b) as being anticipated by Enoki et al. (US Patent No. 5,428,342.)

Claim 47:

Art Unit: 2612

Enoki et al. (Enoki) discloses a monitoring device for monitoring a household electric user presenting an electric load, comprising:

- a. a detector 31 inherently connected between a source of energy and the electric household user (inherent between because it detects the current drawn by the device) for determining at various times the quantity of electric power or current absorbed by the electric user;
- b. a memory 33 for retaining reference data or profiles of electric power or current that are absorbed during operating cycles of a corresponding type of electric user;
- c. a processor 39 for determining status information that is representative of the present status or phase of operation of the household electric user based on the quantities of electric power or current determined by the detector and the stored reference values; and
- d. communication means 38 for providing the status information to an external device 362.

See figs. 2, 3, and 7, col. 3 line 16 to col. 4, line 37, and claim 1 of the reference.

Claim 48:

Processor 39 further determines efficiency information being representative of the efficiency or performance status of the household electric user based on the quantity of electric power or current determined by the detector and the stored reference values, and the communication means provides the efficiency information to an external device. See figs. 2 and 3, col. 3 line 16 to col. 4, line 37, and claim 1 of the reference.

Claim 49:

Art Unit: 2612

Processor 39 further determines wear information relating to estimating the wear status of components of the household electric user, and the communication means provides the wear information to an external device. See figs. 2 and 3, col. 3 line 16 to col. 4, line 37, and claim 1 of the reference.

Claim 50:

The reference data or profiles contained in the memory described in the reference are representative of a theoretical level of absorption of electric power or current that the household electric user would absorb if operating correctly under normal conditions. Col. 3 line 16 to col. 4, line 37, and claim 1 of the reference.

Claim 51:

Processor 39 compares the quantities determined by the detector with the reference data or profiles to determine the status information. Col. 3 line 16 to col. 4, line 37, and claim 1 of the reference.

Claim 52:

Processor 39 provides the status information to the memory.

Claim 53:

Processor 39 in Enoki

- a. determines efficiency information indicating the quality of operation of the household electric user and/or the efficiency status of its internal components, the efficiency information relating to deviations which are considered significant between the quantities determined by the detector and the stored reference data or profiles;

Art Unit: 2612

- b. determines wear information relating to the wear status of components of the household electric user and/or the modes of previous use of the household electric user; and
- c. retains the efficiency and wear information in the memory.

Claim 54:

Communication means 381 includes a connection to a communication bus, the communication means making the status information available to the bus and receiving instructions from the bus. Fig. 7.

Claim 55:

Communication means 38 is a connection to an external electronic apparatus 362 as seen in fig. 7, communication means 38 providing the external electronic apparatus 362 access to the status information and access to the programming of the device. See fig. 8 and col. 7 line 13 to col. 8, line 8.

Claim 56:

Communication means 38 is a connection to an external electronic apparatus, the communication means providing the external electronic apparatus access to the status, efficiency and wear information and access to the programming of the device. See fig. 8 and col. 7 line 13 to col. 8, line 8.

Claims 57 and 58:

It is inherent that a switch that operates under the control of the processor for interrupting the electric supply to the household electric user and the processor controlling the switch based on instructions received over the bus. See col. 7, lines 23-44.

Art Unit: 2612

Claim 59:

The system in Enoki further includes configuration means for selecting, among a plurality of possible selections, the type of electric user that corresponds to the household electric user. Col. 5, lines 30-64.

Claim 60:

Memory 33 contains a plurality of reference data or profiles relating to the operations of various types of electric user and the configuration means selects the reference data or profile relating to the particular household electric user that is associated with the device.

Claims 61:

It is inherent that the electric user in the Enoki system includes a manual switch.

Claims 68-83:

The rejection of these claims recites what was discussed in the rejection of claims 47-61, except they are method claims.

Claim 85:

Enoki discloses a system for monitoring and controlling household appliances that utilize power from the electric mains, the system including:

- a. one or more first household appliances that communicate over a communication network; and
- b. one or more monitoring devices for monitoring and controlling a corresponding number of second household appliances, each monitoring device communicating over the communication network on behalf of the associated second household appliance and including:

Art Unit: 2612

- i. a detector 31 for determining at various times the quantity of electric power or current absorbed by the associated second household appliance,
- ii. a memory 33 for retaining reference data or profiles of electric power or current absorbed during operating cycles of a corresponding type of household appliance;
- iii. a processor 39 for determining status information that is representative of the present status or phase of operation of the second household appliance based on the quantity of absorbed electric power or current determined by the detector and the stored reference data or profiles; and
- iv. a node 38 for communicating on the communication network, the node providing the status information over the network.

Claim 86:

The rejection of claim 86 recites the rejection of claim 48 wherein communications means 38 is a node.

Claim 87:

The monitoring device in Enoki further determines wear information relating to estimating the wear status of components of the associated second household appliance, and the node provides the efficiency information over the network.

Claim 88:

In Enoki, the reference data or profiles are representative of a theoretical level of absorption of electric power or current that the associated second household appliance would



Art Unit: 2612

absorb if operating correctly under normal operating conditions.

*Claim Rejections - 35 USC § 103*

6. Claims 62-66 and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enoki et al. (US Patent No. 5,428,342.)

Claim 62:

processor 39 using the sensor readings to analyze the operations of the household electric user. It is not clear whether current sensor 31 is a differential sensor for detecting current leaks to ground. Nevertheless, it would have been obvious to one skilled in the art to use a differential sensor in the Enoki system because all current sensors are functionally equivalent and it is only up to the implementer's discretion to use a particular current sensor type depending on the configuration of the system, its availability, and cost.

Claim 63:

Though the reference fails to explicitly disclose the use of a temperature sensor, it infers the use of a temperature sensor for sensing ambient temperature, and the processor using the ambient temperature information to analyze the operations of the household electric user. See col. 2, last paragraph.

Claim 64:

It is not clear that communication means is an asynchronous serial line. However, one skilled in the art would have readily recognized implementation the Enoki system so that the

Art Unit: 2612

communications between the monitoring system and the external is asynchronous serial line since it is a conventional communications design.

Claims 65, 66, and 84:

Though it is not clear the alarm in Enoki's system includes an acoustic and/or optical signaling means under the control of the processor for signaling anomalous conditions of operation of the household electric user, it would have been obvious to one skilled in the art that alarm 50 is some form of acoustic and/or optical signaling means because they are conventional forms of alarms signaling. It is inherent that the signal means in Enoki's system is under control of the processor for signaling the status of the switch. Fig. 3.

7. Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Enoki et al. (US Patent No. 5,428,342) in view of Kass et al. (US Patent No. 5,670,074).

Claim 67:

The reference fails to disclose the processor receiving information from one or more external sensors where the one or more external sensors is a gas sensor, a flood sensor, or a smoke sensor and the processor controls the switch to interrupt the electric supply based, in part, on the readings of the external sensors. However, the concept of interrupting the power supply to an electric device when a hazardous condition is sensed is old and conventional in the art as shown in Kass et al.. In light of this teaching, it would have been obvious to one skilled in the art to apply this concept into the system of Enoki's because it would further enhance safety measures.

*Allowable Subject Matter*

8. Claims 89-96 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Applicant's Arguments*

9. The Applicant has presented the following arguments:

Argument 1:

“The Enoki patent specifically teaches away from separately monitoring the operations of each appliance in favor of its simultaneous monitoring of the appliances. See, col. 1, 11.53-60. Thus, the Enoki patent teaches away from the monitoring device of the current invention, which is connected between a source of electric energy for a given household electric user and the electric load of that electric user, as set forth in claim 47 as amended. The language pointing to how the monitoring device is connected has been moved from the preamble of the independent claim 47 to the body of the claim, to more particularly point out the operation of the monitoring device. Accordingly, the claim, as amended, should be allowable over the Enoki reference.”

Argument 2:

“There are further differences between the Enoki system and the current invention. One difference is that the Enoki system must be "trained" in order to retain power spectra that represent the operations of the respective appliances that are to be monitored.

Thus, the Enoki system does not show a memory that **retains reference data or profiles of electric power or current that are absorbed during operating cycles of a corresponding type of electric user** as set forth in claim 47. Instead, Enoki trains its device in order to obtain reference data or profiles based on the operations of the very appliances that are being monitored. Thus, the Enoki system determines on/off and alarm status based on the reference current levels drawn during the training session, and the levels may or may not represent fault-free performance. In contrast, the invention determines its status information based on reference current levels drawn by a corresponding type of electric user, which presumably is operating in a fault-free manner.”

Argument 3:

“The Enoki system can only determine if the respective appliances are operating as they have in the past, and thus, the Enoki system can not compare the power spectra associated with the operations of the respective appliances to those of theoretical levels of operation of corresponding appliances, as set forth in, for example, dependent claim 50.”

***Response to Arguments***

10. Applicant's arguments have been fully considered but they are not persuasive.

Response to argument 1:

Though Enoki stated in the background of invention that it is uneconomical when a sensor is connected to each apparatus, but it also stated that "depending on the kinds and costs of the apparatus." In further review of the reference it is shown that Enoki in fact discloses storing reference current data of each apparatus, detecting current of operating apparatus, and comparing the detected current spectrum of the operating apparatus with its corresponding stored data to determine if the operating condition of apparatus is abnormal. See col. 2, lines 6-15, col. 3 line 51 to col. 4 line 37. Therefore, the reference implicitly teaches connecting a current detector between the source of energy and the appliance in order to monitor the current spectrum of each in order to compare it to the corresponding current spectrum of each respective appliance.

Response to argument 2:

It is submitted that Enoki does not "train" the apparatus. A reference current spectrum profile is obtained during normal operation of the apparatus and stored so that this reference profile can be compared with the detected current profile. This process is to set reference data and is not a training process. In other words, the apparatus does not adjust itself to function as when the reference data is obtained nor it can be forced to function as when the reference data is obtained. Rather the normal operating profile of the apparatus is stored or retained in memory 33 as a reference profile. This profile is obtained during its normal operating cycles and retained in the memory (see col. 4, lines 51-68) to compare with the future operation of the apparatus. This reference profile is extracted during the entire cycle of its operating period. The apparatus

Art Unit: 2612

itself is a corresponding type of the electric user. It is submitted that "a different apparatus of a corresponding type of electric user" may be used to set a reference data or theoretical values but it is not necessary that this apparatus would be fault-free.

Response to argument 3:

It is submitted that the reference data of the apparatus obtained during its normal operation represents theoretical levels of operation of the apparatus.

For reasons stated above, the rejection is maintained.

*Conclusion*

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

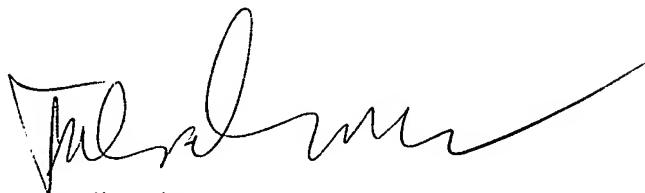
Art Unit: 2612

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Lieu whose telephone number is 571-272-2978. The examiner can normally be reached on MaxiFlex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on 571-272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Julie Lieu', with a long, sweeping horizontal line extending to the right.

Julie Lieu  
Primary Examiner  
Art Unit 2612

Nov 14, 07